

R. S. R. S.

Newsletter

No. 85

May 1968

The Chilbolton Aerial - A successful operation

The 450-ton aerial was raised some seven inches on Friday April 26th by the four specially-built hydraulic jacks placed at the top of the concrete tower, and the faulty ball-race, thirteen feet in diameter and weighing fifteen tons, was satisfactorily withdrawn through the slot cut in the side of the cabin and lowered to the ground by two charter-cranes. The only snag in this carefully planned but marginal operation was a slightly inadequate clearance, which was cured by turning some metal off the rollers carrying the withdrawal rig. This was done very rapidly on the Friday night in the workshops at Slough: the Chilbolton lathe was not large enough, a deficiency to be rectified. A "dummy" bearing of the same external dimensions was then put in by the reverse process and the aerial carefully lowered back on to it. The whole process was completed at 3 a.m. on the following Saturday morning and everyone present breathed a sigh of relief into their cups of cocoa, not least, John McGivney, who has been concerned with the detail planning right from the start.

Great care had to be taken to ensure that undue stresses were not put on to the aerial structure during this undertaking. Strain gauges were connected at various crucial points and continuously recorded, together with the oil-pressures on the hydraulic jacks, which were operated in pairs one-eighth of an inch at a time. The whole operation was in fact beautifully controlled and coordinated: one man recording strains and pressures at a central point, another on each of the four hydraulic hand-pumps, two men on each jack (one reading the movement and the other tightening up the safety nuts as the jacks were extended), and the whole job controlled by (readers may be interested to know) the man who had been Resident Engineer on the Forth road bridge. We were also very fortunate in the weather: rather unusual for Chilbolton. But really the operation was not critically weather-dependent since only an exceptionally strong gale would have stopped us.

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The bearing has now been partially opened up at the AEI factory at Trafford Park in the presence of most of those who could claim some kinship with it. Some damage of a not-unexpected kind was immediately apparent, and parts (including two of the $2\frac{1}{2}$ -inch balls) were retained for detailed examination by AEI. The bearing was then reassembled and is now on its way back to the makers in Germany for a complete examination so that the reason for the damage may (it is hoped) be ascertained. There is world-wide interest in this matter.

The new bearing, which is of the double-roller, instead of the ball, type, is being sent to Chilbolton when the adaptor-ring from the old bearing has been fitted to it, and we expect it to be installed by the end of this month - if the operation proceeds as smoothly as before. There then remains a considerable amount of rehabilitation work, but we look forward now to recommissioning the aerial at the end of August.

R. W. MEADOWS

Station News

Future Events

It is the practice of C.C.I.R. to hold interim meetings of its specialist study groups roughly midway between Plenary Assemblies, which themselves occur every three years. At the interim meetings, a major part of the preparation for the succeeding Plenary Assembly is carried out, although there are opportunities immediately before that assembly for documents to be finally brought up to date.

The Station is particularly concerned with the work of Study Groups IV, V and VI. The two latter groups will be meeting in Boulder, Colorado, in July, and Study Group IV later in the year. The Director, Mr. Horner and Mr. Lane will be attending these meetings as members of the U.K. delegation which the Director has been asked to lead.

Recent Happenings.

ESRO I - Testing has continued on the prototype (P1)₃ and the two flight models (F1 and F2) of the ESRO I satellite which carries two experiments from R.S.R.S. - to measure energy spectron and fluxes of electrons in the range 50 - 400 keV and protons between 5 and 30 MeV.

The P1 satellite has been undergoing compatibility tests at GSFC. Vibration tests on F1 and F2 have recently been completed at ESTEC but solar simulation and thermal vacuum tests on F1 and F2 have been delayed because of difficulties with the test chamber at ESTEC.

TD2

The TD satellite programme has recently been cancelled by ESRO and alternative arrangements for flying the experiments are under discussion. The first prototype model of the R.S.R.S. experiment (which will measure energy spectra and fluxes of electrons with energies between 100 eV and 2000 eV) will be completed by the contractor and tested at R.S.R.S. as a fully working system while we wait for a decision on the future programme.

Anniversary of Ariel-3 Launch

On 5th May 1968 Ariel-3 completed one years life in space. During that time it orbited the earth 5518 times and travelled approximately 240 million kilometers or 150 million miles.

The apogee which was 600 kilometers at launch has fallen to 580 km and the spin rate has decreased from 31 r.p.m. to 10 r.p.m.

Data has been acquired during the 12 months from 12,223 passes at the 15 telemetry stations which include Winkfield, Falklands and Singapore. 131,675 minutes of recordings have been made containing 435 million measurements from the 5 experiments.

In addition the magnetic tape recorder carried in the satellite has recorded over 24 million measurements made during 4204 orbits of the earth and played back the information on command. Apart from a few breaks the tape recorder worked for practically the whole year, which was well in excess of the expected life of a few months.

Staff News

Congratulations to :-

- Peter Pavard on his engagement to Miss Janet Foster of Winchester.
- Mrs. D. E. Robertson on her promotion to Senior Personal Secretary.

Welcome to :-

- | | |
|--------------|-------------------------------|
| C. A. Owens | Sandwich Course Student |
| K. B. Lai | Technical Officer (Singapore) |
| M. W. Lawton | Sandwich Course Student |

Resignations

- | | |
|------------------|--------------------------------------|
| J. C. Arnold | Non-Perm. S.A. |
| R. J. Messias | A.E.O. |
| M. N. Colbourne | A.E.O. |
| Mrs. P. D. Gisby | Non-Perm. Machine Operator part time |
| Mrs. S. Flynn | Part time Cleaner |

Sports and Social Club Notes

The members of the new Committee of the Sports and Social Club are:

- | | | |
|-------------------|---|---------------------------|
| Chairman | : | Dr. Graham Thomas |
| Vice-Chairman | : | Mr. Vince Foley |
| Secretary | : | Miss Pat Dudge |
| Treasurer | : | Dr. David Llewellyn-Jones |
| Minutes Secretary | : | Mrs. Edith Knight |
| Barmen | : | Mr. Bob Slater |
| | | Mr. Tony Dagnall |
| Publicity | : | Mr. Bob Fitchew |
| Catering | : | Mrs. Helen O'Grady |

A tentative programme of social events for the remainder of the year has been drawn up by the Committee:-

A.C.O. Evening	May 28
Herstmonceux trip	June 16
Bar BQ and hop	July 6
S.R.C. Sports Day	July 17?
Rowing Evening	July 30
Ice skating Evening	August
Bowling Evening	August
A.C.O. Return Evening	end of August
Pendley Manor Theatre Evening	Sept.7?
Herstmonceux return visit	Sept.8
Tramps Ball	Oct.5
Bonfire	Nov.5
Christmas Dance	

The Committee would like to hear comments from members on this provisional programme, and particularly suggestions for any other events or activities which members would like to see included in the programme.

BOB FITCHEW

Cricket Section

The 1968 cricket season, heralded by a few claps of thunder and several downpours, is well and truly upon us. The pitch has been cut, bowling arms tested and eight months' dust removed from the kit. All we need now is an external match to try our strength.

Our first match, an internal affair between teams under the captaincy of Eric Dunford and Graham Thomas, took place on 2nd May, the weather having taken pity on us for a few hours. Thomas' team, batting first, made 37, composed on the basis of a solid innings from Moosajee, who made 17. That they made no more was largely due to the bamboozling spin of Evans (4 for 10), a welcome newcomer to RSRS cricket. Eric Dunford's team passed this mark with only two wickets remaining, Dickinson compiling a flamboyant 10.

Other notable features of the evening were some excellent catching and fielding - Bhakta taking a particularly fine catch - and the sign of plenty of talent available for the rest of the season.

The match against Howard Humphries and Partners, on 8th May, was cancelled, to the disappointment of several ducks, who were eagerly awaiting the show from the vantage point of the lawn outside the canteen.

C.R.B.

WHICH

The bulk subscription to the Consumer Association (CA) publication WHICH is due for renewal shortly (the year runs from August to July). Because of the number of subscribers here, we are offered a reduced rate (usually 21/- instead of 30/- for WHICH, and 42/- instead of 60/- for WHICH plus quarterly car supplement). There is also a suggestion currently under review for a MONEY WHICH dealing with such problems as investment and banking. The GOOD FOOD GUIDE is available to CA subscribers at a reduced rate, as are other CA publications such as Buying a House, and Law for Consumers. New subscribers and subscribers wishing to renew their subscription should contact me as soon as possible.

VERONICA LOVELL

Conservation of Parity

Noah built an ark, we know,
We have often heard the tales,
Of how he brought in everything,
From mice right up to whales.

His establishment kept records,
Of that there is no doubt,
But when the floods subsided,
The records were washed out.

The records now in being,
Are in a good index,
But we have no means of picking
Each one out by their sex.

We're sorry for the Editor,
Who sings a song of woe,
And if we find an Editress,
We'll tell him where to go!

Please don't misunderstand us,
We don't mean go to --
We'll tell him where to find her,
And hope she suits him well!

LETTER TO THE OUTSTATIONS

Dear Colleagues,

You see from the previous lines that the muse has been active among the nymphs of Arcady - or at any rate the upper corridor.

Having caused them to make their poetic and most welcome contribution this same muse has clearly decided that enough has been done to fulfil the Working Hours (Muses and Allied Trades) Agreement, 1400 b.c., freely entered into on behalf of gods and men by their appointed representatives - Apollo for the management side.

All of which means, as you have no doubt guessed, that I'm forced to adopt the approach of any Decent Englishman, and talk about the weather. It just so happens that, for a day or two, it has been worth mentioning. Your Editor writes this in shirt-sleeve order looking out on sunshine and buttercups; in the background the drowsy hum of insects - or is it the distant murmur of great philosophers? On such a day as this, at such a time, the bee and the sage, industrious both, sound much alike.

It was not always thus. The previous ten days have been replete with rain; so much, indeed, that three pairs of ducks took up residence on the front lawn, spending several days a-dabbling in that rather soggy bit in front of the willow tree. It's dry now and they've gone; but whether to pastures new or rural cooking-pot we never shall know.

Come to think of it, we had even more weather a bit before the wet came. There was a cold snap and snow over all. For the first time there wasn't a single spare newsletter, not one. Exaltation, then realisation; they had probably been taken for firelighting, not for the warmth of the prose of,

Yours sincerely,

The Editor

REPRINTS

April 1968

Studies of Resonances and other phenomena on the fixed-frequency topside
sounder Records

J. W. King, G. L. Hawkins and H. G. Rix

Published : J.A.T.P. Date 1968 Vol.30 Pages 621-626

Long-lasting storm effects in the ionospheric D-region

J. W. King and J. L. Fooks

Published : J.A.T.P. Date 1968 Vol.30 Pages 639-643

Equipment for a global survey of terrestrial radio noise

Published:- Radio & Electronic Engineer Date 3rd March 1968 Vol.35

B. N. Harden and V. A. W. Harrison

A psychrometer radiosonde developed for determining radio refractive index as
a function of height.

M. P. M. Hall and G. W. Gardiner

Published : Journal of Scientific Instruments Date 1968 Series 2 Vol.1

"On explaining the behaviour of the ionospheric F region"

H. Rishbeth

Published : Reviews of Geophysics, 6 (1) 33-71, Feb.1968

Internal Memoranda - Nil

